

REMARKS/ARGUMENTS:

Claim 18 is amended. Claims 18, 20, 21, 23, and 26-38 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

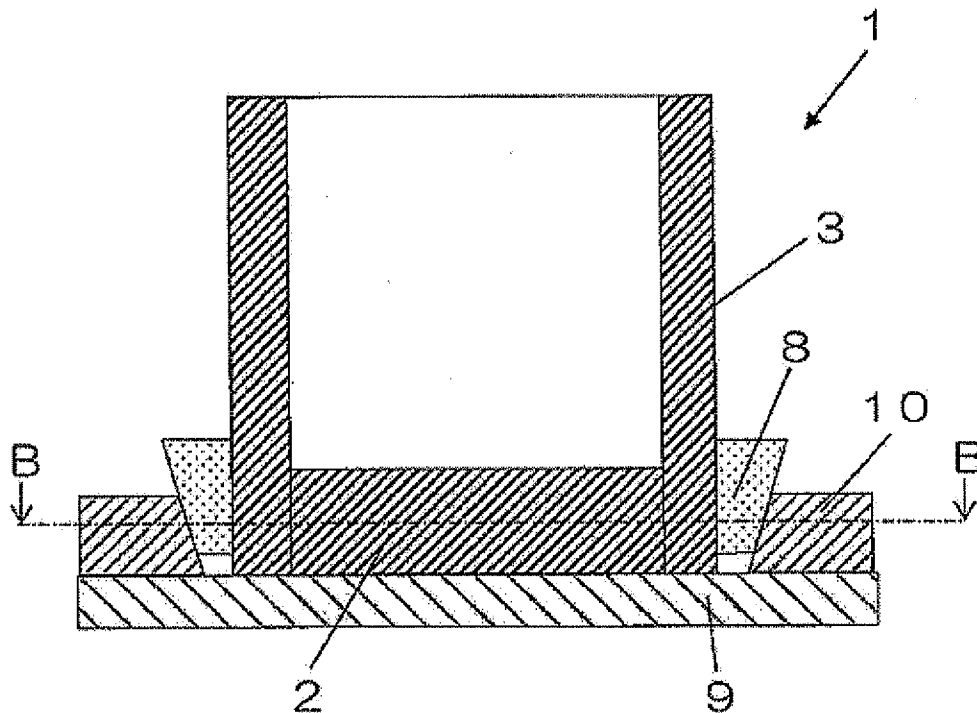
CLAIM REJECTIONS UNDER 35 U.S.C. § 103:

Claims 18, 20, 21, 23, 28-34, and 36-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bate (U.S. Patent No. 3,165,798) in view of Kempton (U.S. Patent No. 1,386,003). Applicant respectfully traverses this rejection. Claim 18, as amended, is as follows:

A mold for producing a silicon ingot, comprising:
a bottom surface member; and
a plurality of lateral surface members combining with the bottom surface member,
and each lateral surface member comprising a first engaging structure on a first lateral end thereof and a second engaging structure on a second lateral end thereof, one of the first and second engaging structures of one of the plurality of lateral surface members engages with one of the first and second engaging structures of another one of the plurality of lateral surface members,
wherein the first and second engaging structures each comprises a projection and a recess, and
wherein the plurality of lateral surface members are in contact with an outer peripheral side surface of the bottom surface member and are upright so as to surround the bottom surface member, and
the mold for producing a silicon ingot further comprising:
a mold holder configured for placing the bottom surface member and the plurality of lateral surface members that are combined, the mold holder being provided independently from the bottom surface member;
a wedge receiver on an upper surface of the mold holder; and
a plurality of wedge members respectively positioned in clearances between the wedged receiver and outer peripheral surfaces of the plurality of lateral surface members.

Applicant respectfully submits that the differences between the subject matter of claim 18 and the cited references are such that the subject matter as a whole would not have been obvious at the time the invention was made to a person of ordinary skill in the art. Applicant submits that the cited references do not teach or suggest a "mold for producing a silicon ingot" according to claim 18 "wherein the plurality of lateral surface members are in contact with an outer peripheral side surface of the bottom surface member and are upright so as to surround the bottom surface member." Nor has the Office cited any other rationale or provided any other reasoned explanation on which an obviousness rejection may be made.

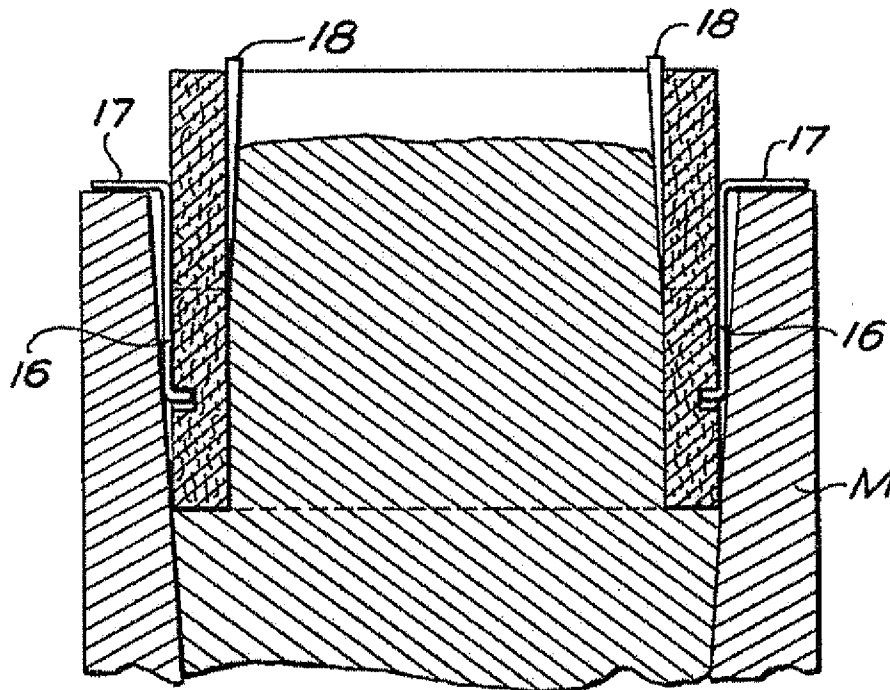
Figure 5(a) of an embodiment of the present invention is as follows:



It is an aspect of the present invention that the mold 1 is assembled by placing the bottom surface member 2 on the mold holder 9 provided with the wedge receivers 10, arranging the four lateral surface members 3 so as to surround the outer periphery of the bottom surface member 2, and respectively driving the wedges 8 between the outer surfaces of the lateral surface members 3 and the

wedge receivers 10. The wedge receiver 10 and each of the lateral surface members 3 can be firmly fixed to each other without loosening a joining portion between the bottom surface member 2 and the lateral surface member 3 by driving the wedge 8 between the wedge receiver 10 and the lateral surface member 3. Therefore, the leakage of a silicon melt is restrained, so that the size of the mold 1 can be increased. The necessity of subjecting the bottom surface member 2 composed of a high-cost graphite mold member to special processing for preventing the leakage of the silicon melt is eliminated, so that the rise in the cost of the mold can be restrained. (Applicant's specification, at p. 33, line 16-p. 34, line 12).

Figure 5 of Bate is as follows:

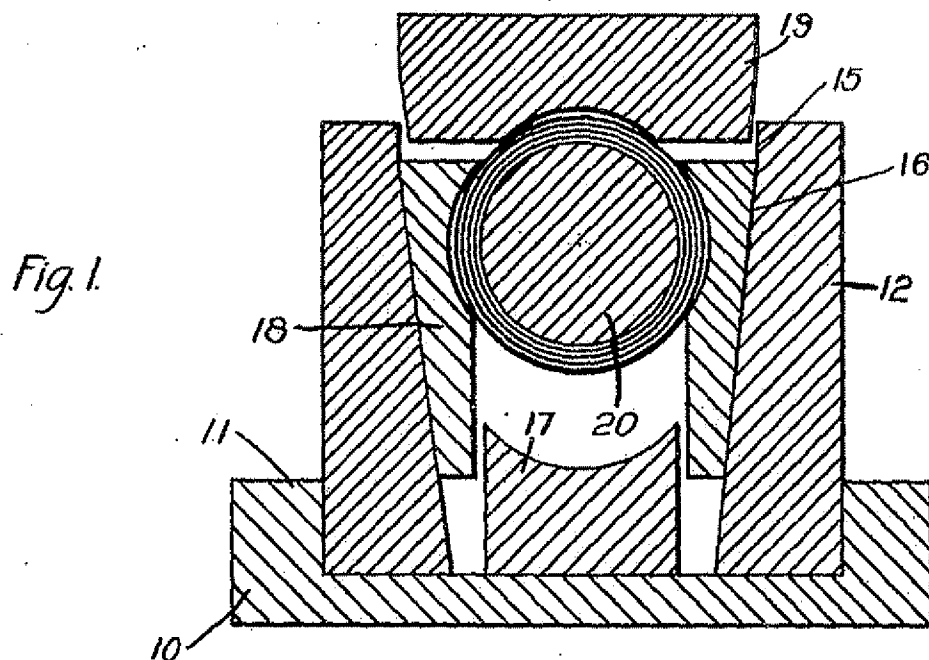


Bate is generally directed to a hot top used in conjunction with ingot molds. (Bate, column 1, lines 7-11). Bate teaches that the hot top has a pair of side portions 12, 13 and a pair of end portions 10, 11. (Bate, column 2, lines 44-49; Figure 1). The bottom of Bate's hot top lacks a surface. (Bates, Figures 1 and 5).

However, should the Office consider the ingot mold (M) to be "a bottom surface member," then Bates would lack "a mold holder." And if the Office considers the ingot mold (M) to be "a mold holder," then Bates would lack "a bottom surface member." In either case, Bates fails to teach or suggest having both a "bottom surface member" and "a mold holder."

Furthermore, in Bates the lateral surface members are NOT in contact with an outer peripheral side surface of the bottom surface member, as is clarified by amended claim 18. Kempton cannot remedy the defect of Bates.

Fig. 1 of Kempton is as follows:



Kempton teaches a mold for use in the manufacture of rods and tubes. Even if the Office were to consider the stationary splits 17 in Fig. 1 of Kempton to be "a bottom surface member," there would be NO contact with the "lateral surface members" 12 or 18. The mold of Kempton is of the moving press type variety, in contrast to that of the present invention, which is not of the moving type.

In an embodiment of the present invention, melted silicon is poured in the tight stationary space formed of the bottom surface member (2) and the lateral surface member (3), and cooled. The members (2, 3) are not moving in the pouring and cooling processes. In contrast, Bate teaches a hot top that is a cubic like inlet to pour a melted silicon or the like into a mold. Therefore, Applicant respectfully submits that no bottom surface should exist in Bate.

The Office at p. 4, bottom paragraph states, "Bate (US '798) teaches a mold for producing an ingot comprising a bottom surface member at the end portion of the mold... ."

Applicant respectfully disagrees. If a person of ordinary skill in the art attaches a bottom surface member to the Bate's hot top, it would not be possible to pour melted silicon through the hot top for reasons discussed above.

In light of the foregoing, Applicant respectfully submits that the cited references cannot render claim 18 obvious, because the cited references fail to teach or suggest each and every claim limitation. Claims 20, 21, 23, 28-34, and 36-38 depend from claim 18 and therefore, cannot be rendered obvious over the cited references for at least the same reasons as claim 18. Withdrawal of this rejection is thus respectfully requested.

Claims 26 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bate in view of Kempton and further in view of Chapin (U.S. Patent No. 1,572,707). Applicant believes "1,572,707" is a typographical error and the Office intended to cite U.S. Patent No. 1,572,705. Applicant respectfully traverses this rejection.

Claims 26 and 27 depend from claim 18 and are therefore, patentable over Bate and Kempton for at least the same reasons discussed above. Chapin cannot remedy the defect of Bate and Kempton and is not relied upon by the Office for such. Instead, the Office cites Chapin for teaching that wedge receivers (D) are

Appl. No. 10/597,514
Amdt. Dated October 20, 2011
Reply to Office Action of July 20, 2011

Attorney Docket No. 374611-000138
Customer No.: 73230

removable from the upper surface of the mold holder and, a plurality of wedge receivers (D) exists and a space between one of the plurality of wedge receivers (D) and another one wedge receiver is arranged at a position opposed to the one of the wedge receivers with the bottom surface member and the plurality of lateral surface members that are combined there-between.

In light of the foregoing, Applicant respectfully submits that the cited references cannot render claims 26 and 27 obvious, because the cited references fail to teach or suggest each and every claim limitation. Withdrawal of this rejection is thus respectfully requested.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

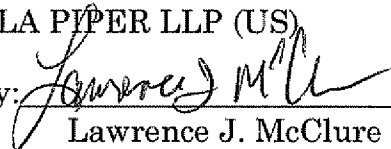
If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 595-3107 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 07-1896.

Respectfully submitted,

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Date: October 20, 2011

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